IN THE CLAIMS

Please amend the claims as follows:

1. (original) An optical disc-writing parameters optimizing system, comprising:

an acquiring device for acquiring the variation amounts of the mark runlengths;

a confirming device for confirming the modulation amounts of the writing parameters; and

a modulating device for modulating the values of said writing parameters.

2. (original) The device according to claim 1, further comprising a judging device for judging whether it is necessary to optimize.

3. (original) A method for optimizing the optical disc-writing parameters, comprising the following steps:

a) acquiring the variation amounts of the mark runlengths;

b) confirming the modulation amounts of the writing parameters based on the relationship between the variation amounts of the mark runlengths and the modulation amounts of the writing parameters; and

c) modulating said parameters.

d)

4. (original) The method according to claim 3, wherein the step (b) further comprising:

(b1) confirming the variation amounts of the physical mark lengths based on the relationship between the variation amounts of the mark runlengths and the variation amounts of the physical mark lengths ;

(b2) confirming the modulation amounts of the writing parameters

based on the relationship between the variation amounts of the physical mark lengths and the modulation amounts of the writing parameters.

5. (original) The method according to claim 4, wherein the relationship between the variation amounts of the mark runlengths and the variation amounts of the physical mark lengths in step (b1), comprising:

the influence relationship of the variation amounts of the physical mark lengths on the variation amounts of the mark runlengths.

6. (original) The method according to claim 5, wherein the influence relationship between the variation amounts of the physical mark lengths on the variation amounts of the mark runlengths comprising:

the relationships between the variation amounts of the physical mark lengths and the variation amounts of the mark runlengths, as well as the characterization amounts of the influence degrees of the variation amounts of the physical mark lengths on the variation amounts of the mark runlengths.

7. (original) The method according to claim 6, wherein said characterization amounts of the influence degrees including:

the influence coefficients of the variation amounts of the physical mark lengths on the variation amounts of the mark runlengths.

8. (original) The method according to claim 3, wherein said writing parameters include a plurality of writing parameters.

9. (original) The method according to claim 7, wherein the relationship between the variation amounts of the mark runlengths and the variation amounts of the physical mark lengths includes the following formula:

$$\begin{bmatrix} dPhyL_1 \\ dPhyL_2 \\ dPhyL_3 \\ \vdots \\ dPhyL_j \\ \vdots \\ dPhyL_M \end{bmatrix} = \begin{bmatrix} v_{11} & v_{12} & v_{13} & \cdots & v_{1j} & \cdots & v_{1M} \\ v_{21} & v_{22} & v_{23} & \cdots & v_{2j} & \cdots & v_{2M} \\ \vdots & \vdots & \vdots & \ddots & \vdots & \vdots & \vdots \\ v_{i1} & v_{i2} & v_{i3} & \cdots & v_{ij} & \cdots & v_{iM} \\ \vdots & \vdots & \vdots & \cdots & \vdots & \ddots & \vdots \\ v_{N1} & v_{N2} & v_{N3} & \cdots & v_{Nj} & \cdots & v_{NM} \end{bmatrix}^{-1} \bullet \begin{bmatrix} \Delta \mathrm{MarkRL}_1 \\ \Delta \mathrm{MarkRL}_2 \\ \vdots \\ \Delta \mathrm{MarkRL}_i \\ \vdots \\ \Delta \mathrm{MarkRL}_N \end{bmatrix}$$

wherein the writing parameters which need optimization are j=1,2, ...M□

dPhyLj represents the variation amount of the physical length of the mark, which is directly influenced by the j^{th} writing parameter which needs optimization.

ΔmarkRLi represents the measured i^{th} variation amount of the mark runlength;

in the transformation matrix, the coefficient v_{ij} is the influence coefficient, which represents the influence of parameter j on mark i, $v_{ij} = -jp + 1$ when parameter j influences mark i directly;

$v_{ij} = -jp + 1$ when parameter j does not influence mark i directly;

jp represents the percentage of the numbers of the mark samples influenced directly by the j^{th} writing parameter which needs optimization in the whole mark samples.

10. (original) The method according to claim 9, wherein the determinant of said transformation matrix of the influence coefficients doesn't equal zero, which is written as:

$$\det\begin{bmatrix} v_{11} & v_{12} & v_{13} & \cdots & v_{1j} & \cdots & v_{1M} \\ v_{21} & v_{22} & v_{23} & \cdots & v_{2j} & \cdots & v_{2M} \\ \vdots & \vdots & \vdots & \ddots & \vdots & \vdots & \vdots \\ v_{i1} & v_{i2} & v_{i3} & \cdots & v_{ij} & \cdots & v_{iM} \\ \vdots & \vdots & \vdots & \cdots & \vdots & \ddots & \vdots \\ v_{N1} & v_{N2} & v_{N3} & \cdots & v_{Nj} & \cdots & v_{NM} \end{bmatrix} \neq 0$$

11. (original) The method according to claim 4, wherein the step (b2) comprising the following steps:

(b2.1) doing writing experiments with a plurality of the parameter values (Pr) in order to optimize the writing parameter (r);

(b2.2) measuring the variation amount ΔMarkRLs of the length of the mark (s)'s movement, which is influenced directly by the writing parameter (r), to acquire the function relationship ΔMarkRLs = f1(Pr) between ΔMarkRLs and the parameter value (Pr);

(b2.3) measuring the variation amount ΔmarkRLt of the length of the mark (t)'s movement, which is not influenced directly by the writing parameter (r), to acquire the function relationship ΔmarkRLt = f2(Pr) between ΔmarkRLt and the parameter value (Pr);

(b2.4) subtracting the result of step (b2.3) from the result of step (b2.2), to acquire the relationship dPhyLr = ΔMarkRLs - ΔMarkRL t= f1(Pr) - f2(Pr) = f1-2(Pr) = f(Pr0+dPr) between the variation amount (dPhyLr) of the physical length of the mark and the parameter value (Pr) which needs optimization (wherein Pr0 is the original value of the writing parameter(r), dPr is the variation amount of the parameter value).

12. (original) The method according to claim 3, further comprising a step:

writing a random data on said optical disc.

13. (original) The method according to claim 3, further comprising a step:

comparing the variation amounts of each mark runlength with the predetermined optimization aim, to confirm if the continued optimization is needed.

14. (original) The method according to claim 13, further comprising a step:

confirming the current parameter value as the parameter value which will be written to optical disc when the continued optimization is not needed.

15. (currently amended) The method according to claim 3 ~~any of claims 3-14~~, wherein said writing parameters comprise the power of the laser pulses.

16. (currently amended) The method according to claim 3 ~~any of claims 3-14~~, wherein said writing parameters comprise the starting time and the stopping time of the laser pulses.

17. (currently amended) The method according to claim 3 ~~any of claims 3-14~~, wherein the square-shaped writing strategy,"dog frame" wave-shaped writing strategy, "1T writing strategy" or "2T writing strategy" are adopted for said optical disc-writing.